

## **ABSTRACT**

An unsupervised method of segmenting data sets using a region growing technique in which data points are initially assigned to a single class, new classes are seeded and points in the data set tested by calculating the probability that they belong to the new class. The probability distributions used in the calculation are adapted as points are reassigned. Classes which fail to grow are discarded. The technique may be applied to the segmentation of data sets in which the data points are taken from medical images. The method may be applied to the demarcation of different parts of structures, e.g. in the medical field demarcating an aneurysm from the surrounding blood vessels in an image or 3-D model of a patient's vasculature. The method may involve using a shape descriptor which is representative of the shape of the structure at each point under consideration. Thus the different parts are distinguished on the basis of their shape.